

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
8 April 2004 (08.04.2004)

PCT

(10) International Publication Number  
**WO 2004/028475 A3**

(51) International Patent Classification<sup>7</sup>: A61K 31/70, C07H 15/00

(74) Agents: COOPER, Iver, P. et al; 624 Ninth Street N.W., Suite 300, Washington, DC 20001-5303 (US).

(21) International Application Number:  
PCT/US2003/03061 1

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

(22) International Filing Date:  
29 September 2003 (29.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/413,882 27 September 2002 (27.09.2002) US

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): BIOMIRA, INC. [CA/CA]; Edmonton Research Park, 201 1 - 94 Street, Edmonton, Alberta TGN 1H1 (CA).

(71) Applicant (*for SD only*): MCINNIS, Patricia [US/US]; 2325 42nd Street, N.W., Apt. 203, Washington, DC 20007 (US).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): JIANG, Zi-Hua [CN/CA]; 2512-106 Street, Edmonton, Alberta T6J 4R8 (CA). GANDHI, Sham [CA/CA]; 2018-46 Street, Edmonton, Alberta T6L 2T5 (CA). KOGANTY, Rao, R. [CA/CA]; 11605 - 26 Avenue, Edmonton, Alberta T6J 3R3 (CA).

(88) Date of publication of the international search report:  
5 January 2006

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

WO 2004/028475 A3

(54) Title: GLYCOSYLCERAMIDE ANALOGUES

(57) Abstract: Glycosylceramide analogues are disclosed in which the ceramide moiety and optionally the carbohydrate moiety are modified or replaced. These analogues are useful as immunomodulators, antitumor agents, and as other pharmaceutical agents.

## INTERNATIONAL SEARCH REPORT

International application No

PCT/US03/3061 1

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) A61K 31/70, C07H 15/00

US CL 514/25, 536/4 1 17 2

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U S 514/25 536/4 1 17 2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and where practicable search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	US 5,202,357 A (BOWSER et al) 13 April 1993 (13 04 1993), column 7, lines 35 67 and column 8, lines 1-8	1-45, 49 55, 62-98, 140 and 141

☐ Further documents are listed in the continuation of Box C ☐ See patent family annex

Special categories of cited documents	T *	Inter document published after the international filing date or priority date and not in conflict with the application but cited to under stand the principle or theory underlying the invention
"\ document defining the general state of the art in which is not considered to be of particular relevance		
"h earlier application or patent published on or after the international filing date	X	document of particular relevance the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken into account
"L document which in view of doubts on prior art (s) to which is cited to establish the publication date of mother citation or other special cases (as specified)	Y	document of particular relevance the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents such combination being obvious to a person skilled in the art
O document referring to in oral disclosure use exhibition or other means		
P document published prior to the international filing date but later than the priority date	"&	document member of the same patent family

Date of the actual completion of the international search

17 August 2005 (17 08 2005)

Date of mailing of the international search report

D9 NQV 7F 13

Name and mailing address of (the) ISA/US

Mail Stop PCT Admin ISA/US

Commissions of Patents

P O Box 1450

Alexandria Virginia 22313 1450

Facsimile No (703) 305-3230

Authorized officer

ELLI PESELEV

Telephone No (571) 272-1600

# INTERNATIONAL SEARCH REPORT

International application No

PCT/US03/3061 .1

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons

- 1 ☐ Claim Nos  
because they relate to subject matter not required to be searched by this Authority namely
- 2 ☒ Claim Nos 142 and 143  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically  
These claims are not listed
- 3 ☒ Claim Nos 46 48 56-61, 99 139 and 144 149  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6 4(a)

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application as follows

- 1 ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
- 2 ☐ As all searchable claims could be searched without effort justifying an additional fee this Authority did not invite payment of any additional fee
- 3 ☐ As only some of the required additional search fees were timely paid by the applicant this international search report covers only those claims for which fees were paid specifically claims Nos
- 4 ☐ No required additional search fees were timely paid by the applicant Consequently this international search report is restricted to the invention first mentioned in the claims, it is covered by claims Nos

Remark on Protest

☐

The additional search fees were accompanied by the applicant's protest

☐

No protest accompanied the payment of additional search fees